

Practitioner's Docket No.: 791_188

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Toshihiro YOSHIDA and Hiroshi NEMOTO

Ser. No.: 10/087,359

Art Unit: 1745

Filed: March 1, 2002

Examiner: Dah Wei D. Yuan

Conf. No.: 3319

For: ELECTRODE BODY EVALUATION METHOD AND LITHIUM
SECONDARY CELL USING THE SAME

RULE 132 DECLARATION OF TOSHIHIRO YOSHIDA

Sir:

I, TOSHIHIRO YOSHIDA, a citizen of Japan, hereby declare and state that:

1. I have a Bachelor's Degree in Science which was conferred upon me by Tokyo University of Science in Tokyo, Japan, in 1988.

2. I have been employed by NGK Insulators, Ltd. since 1988. For the past five years I have been working in the research and development of batteries, including lithium secondary batteries.

3. I am one of the inventors listed in the above-identified application and am familiar with the prosecution history of the application, including the positions taken by the PTO Examiner in the Office Action mailed March 3, 2005. It is my understanding that the PTO Examiner is arguing that the original specification does not disclose a 2 Ah battery that exhibits a ratio of limit discharging current to cell capacity of at least around 31.25, as recited in pending claim 54. It also is my understanding that the Examiner has based his conclusion on the fact that the 31.25 ratio was derived from the examples in Table 1 of the application, all of which relate to 8 Ah batteries.

4. When we prepared the examples reported in Tables 1 and 2 of the present application, we prepared all of the batteries to have a capacity of 8 Ah, so that battery capacity would not be a variable between the various examples. One skilled in the art

understands, however, that the relationship between battery capacity and limit discharge current is essentially linear. Specifically, a reduction in the capacity of a battery would cause a corresponding reduction in the limit discharge current exhibited by that battery. For example, all other things being equal, if two batteries were manufactured to a capacity of 8 Ah and 2 Ah, one skilled in the art would understand that the limit discharge current of the 2 Ah battery would be about 1/4 of that of the 8 Ah battery.

5. The following experiment was conducted under my direct supervision to confirm the linear relationship between capacity and limit discharge current, as already understood by those skilled in the art.

6. Embodiment 9, as described on pages 48-52 of the present specification, was repeated in exactly the same manner as described in the specification, except that the size of the positive electrode and negative electrode were reduced in size by a factor of 4, as compared to the 8 Ah battery described as Embodiment 9 in the present application. As one skilled in the art would have expected, since the area of the positive and negative electrodes was reduced by a factor of 4, the battery capacity after initial charging of all cells was about 2 Ah. This is 1/4 of the capacity of the 8 Ah battery as described in Embodiment 9 in the present application.

7. When tested, the 2 Ah battery exhibited a limit discharge current of about 60 A. This is about 1/4 of the limit discharge current exhibited by the 8 Ah battery described as Embodiment 9 in the present application. Again, this is to be expected, since one skilled in the art understands that a reduction in battery capacity by a factor of about 4 would inherently result in a reduction in limit discharge current by a factor of about 4.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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June 17, 2005

Date

T. Yoshida

Toshihiro Yoshida